

CASE 20 — near Duluth, Minnesota, 1982.

A 19-year-old man was hunting hares in thick cover in northern Minnesota during January. He saw a movement ahead, and then he was attacked and knocked down by a wolf. He rolled on the ground with the animal, holding it away by grabbing its throat. The young man discharged his .22 rifle and the noise of the shot apparently frightened the wolf away. The wolf did not bite, but scratched the man's thigh with its claws.

Mech (1990) speculated this incident occurred because the wolf mistook the young man for a deer in the thick cover. The hunter's clothes were laced with buck scent and that, coupled with the hunter's movements, may have stimulated the attack.

Source: Mech 1990.

CASE 21 — Ellsmere Island, Nunavut 1977.

Paleontologists J Hutchison and M Dawson were conducting fieldwork on Ellsmere Island on 29 June. They were sitting on the rim of a canyon when they sighted a pack of 6 wolves foraging along a shoreline 120 m below. One of the wolves detected the scientists and the pack began moving up the slope toward them. When the wolves were within 5 m, the man and woman stood, and Dawson threw her pack toward the wolves. The wolves continued to press their approach as Hutchison and Dawson retreated a short distance down slope for better footing and for access to several large clods of mud. Munthe and Hutchison (1978) described the wolves' actions as follows: "The wolves continued toward us, while we shouted and threw clods in their direction. The animals halted 3–4 m from us. Most of the wolves trotted from side to side within about a 3-m space for a few seconds, and then one attempted to circle behind us but turned when a clod landed near it. One wolf then took the lead and, looking Dr Dawson directly in the face, walked steadily forward, ignoring our poorly aimed clods. Its ears were erect and its mouth closed or just ajar. When approximately 1.5 m away, the wolf leapt toward Dr Dawson's head. At the leap, Dr Dawson leaned back, arms forward but near the body, and uttered a small cry. The wolf grazed her cheek, leaving it wet with saliva, then dropped to the ground, turned, and with a few backward glances, retreated." All 6 wolves then moved away without further incident. None of the wolves had vocalized during the incident or exhibited other threat displays. However, after the encounter, the wolves traveled to Hutchison's and Dawson's camp and dug into a shallow latrine.

In evaluating the encounter Munthe and Hutchison (1978) speculated it was related to testing of unfamiliar prey. However, they also mention that they had no knowledge of the wolves' history with other people. Case 5 is strikingly similar to the one described by Munthe and Hutchison and also involved a pack of wolves on Ellsmere; however, the wolves described in Case 5 were likely food conditioned. It is possible that the wolves encountered by Munthe and Hutchison had previously received food handouts and were displaying a food-conditioned approach.

Source: Munthe and Hutchinson 1978.

CASE 22 — Salcha River, Alaska, 1976.

In summer 1976 Roy Lawrence and his 7-year-old son David were flown into a remote landing strip near the Salcha River in Interior Alaska. Roy and pilot Ed Galvin stood next to the airplane talking while David walked to the edge of the river and crouched to play in the water, only 30 m from his father. Movement about 50 m from David caught Roy's attention, and he saw

a wolf running directly toward his son. Roy yelled at his son, telling him to lie down in the willows; David immediately complied. Having lost sight of the boy, the wolf stopped and stood on its hind legs looking over the brush in the boy's direction. In the meantime, Galvin withdrew his loaded rifle from the airplane and immediately shot the wolf twice, killing it a short distance from the boy. Galvin, an experienced hunter, identified the wolf as a young female and estimated her weight at 32 kg; both men thought the wolf looked emaciated.

Wolves in Interior Alaska commonly prey on caribou and moose calves during early summer, and it is easy to imagine how the boy's crouched form and movement near the water's edge could have been perceived by the wolf as potential prey. The wolf's apparent disregard for the 2 men and the airplane is surprising, but similar to other incidents where healthy wolves have stalked toward people, ignoring nearby aircraft and bystanders (Cases 19, 78, and 79). Apparently, during a stalk, a wolf's concentration on potential prey is so focused that peripheral stimuli, even if unfamiliar, are sometimes ignored.

Source: Roy Lawrence, Haines, Alaska, personal communication.

CASE 23 — Tonzona River, Alaska, 1975.

Bob Piorkowski and his wife lived on a remote homestead in Interior Alaska near Denali Park. One October evening just before dark they heard their dog persistently barking near a hill about 75 m from their cabin. Piorkowski thought the dog was barking at a moose, and hoping to get a shot at the moose, the couple took a rifle when they went to investigate. As they approached the dog, the Piorkowski's saw 5 wolves running down the hill taking long, leaping bounds. The wolves appeared focused on Piorkowski and his wife, rather than on the dog that stood alone about 5 m away. Suddenly realizing that the wolves were attacking, Piorkowski brought his rifle level and fired from the hip, striking the lead wolf in the chest and killing it at point blank range directly in front of himself. He fired at a second wolf less than 10 m away, killing it as well. The other wolves retreated up the hill.

The presence of the dog, and the dog's barking prior to the attack, raises a question as to the intended target of the wolf attack. Although territorial defense may have been a motivating factor in this incident, the presence of 2 people did not inhibit the wolves' charge and when fired upon, the wolves seemed focused on the people rather than upon the dog. Bob Piorkowski was experienced with wolves, and at the time of the attack he was assisting on a wolf research project within Denali Park. He described the lead wolf as exceptionally large, probably the alpha male. He kept the hide and it was later mounted into a life-sized mount.

Source: Dr Bob Piorkowski, Alaska Department of Fish and Game, personal communication.

CASE 24 — Wien Lake, Alaska, circa 1969.

Alex Lamont lived alone in a dugout cabin on the shore of Wien Lake, Alaska. Once each month, bush pilot Al Wright landed at Wien Lake to deliver Lamont's provisions. On one of his supply runs in the late 1960s, Wright received 2 dried and stretched wolf hides from Lamont who asked Wright to fly the hides to Fairbanks and collect the bounty. Lamont then told Wright that he had been attacked and bitten by one of the wolves about 2 weeks earlier. According to Lamont, he was walking near his camp when he saw the 2 wolves running toward him. As the wolves approached he drew a pistol and fired, killing the first wolf after it had grabbed him, torn through his pants, and inflicted a bite wound on his leg. The second wolf was nearby and Lamont

shot it at close range. Wright reported that when he landed at Lamont's cabin, about 2 weeks after the incident, the bite wound had mostly healed and that Lamont never suffered long-term ill effect from the bite.

A bounty paid on wolves in Interior Alaska during the early 1960s was repealed in 1968. Upon returning to Fairbanks with the hides, Wright discovered that the bounty had been repealed the previous winter. Both he and Lamont were previously unaware of the change in the bounty. Wright reported that the hides were small and of little value without the bounty, so he discarded them. The timing of the change in bounty regulations indicates the wolf attack on Lamont occurred in summer 1969, the first summer in which there was no bounty on wolves in Interior Alaska.

Source: Al Wright, Fairbanks, Alaska, personal communication.

CASE 25 — Northern Saskatchewan, ca 1950.

Tim Trottier described an encounter between a pack of wolves and his late father-in-law, Thomas Hamilton. The event occurred in the late 1950s in the Lower Foster-Saint Lakes area of northern Saskatchewan, about 160 km north of La Ronge.

Hamilton was traveling by dog team and while crossing a lake, spotted several wolves about 1–1.5 km away lounging on the snow-covered ice. The trapper headed for the cover of a nearby island, tied up his dogs, and taking his rifle, stalked through the brush to get closer. At the end of the island he was about 500 m from the wolves. While Hamilton watched from the brush, one of the wolves stood up and looked intently in the direction of the island. Then the rest of the pack suddenly rose to their feet. Thomas had the first wolf in his sights and was about to fire when the pack began running directly at him. He waited for a better shot, expecting the wolves to stop, but they came fast and almost ran over him, bounding through the brush on either side. He managed to shoot the lead wolf at point blank range and fired more shots before the remaining wolves disappeared behind him. Concerned about his dogs, the man ran back to the other side of the island where he found the dogs all resting quietly, curled up in the deep snow. The dogs had apparently not detected the wolves.

Like the Piorkowski case (Case 23), dogs were present nearby when wolves charged toward Thomas Hamilton. Hamilton believed the wolves had mistaken him for a moose or caribou, but the presence and scent of the dog team certainly could have been a factor in this case, even though the dogs were hidden from the wolves' view.

Source: Tim Trottier, Saskatchewan Environment and Resource Management, La Ronge, Saskatchewan, personal communication.

Self-Defense

Defense of Den Sites, Rendezvous Sites, or Conspecifics. When people approach dens or rendezvous sites wolves commonly react by howling and barking, and they may briefly charge toward the intruders. As illustrated in the following accounts, the intensity of the threat behavior near dens or rendezvous sites is variable. Undoubtedly this behavior is related to the defense of pups, but wolves sometimes exhibit similar behavior when defending disabled or even dead pack mates. Cases 26–35 describe several encounters where wolves were defending dens, rendezvous sites, or disabled conspecifics.

CASE 26 — Candle Lake, Saskatchewan, 2000.

In July, biologist Ed Kowal and 2 other biologists landed by helicopter to retrieve a radio collar from an elk that had been killed by wolves about 15 km southwest of Candle Lake, Saskatchewan. The helicopter landed in a clearcut about 300 m from where the collar lay in a stand of black spruce. As the biologists walked into the thick stand of trees, they saw an adult female wolf about 20 m ahead. The wolf was staring at them with the fur on its back erected. Kowal grabbed a large stick from the ground and as he advanced he struck the stick against a tree believing the noise would frighten the wolf. Instead the wolf stood its ground and began to growl. After about a minute Kowal again walked toward her with the stick raised, and when he approached to within 15 m the wolf slowly moved away and out of sight into the trees. Several other wolves could be heard howling ahead of the biologists. After finding the elk collar near a wolf den, the biologists returned to the helicopter without seeing the wolves, but the wolves continued to howl nearby.

Source: Ed Kowal, Saskatchewan Environment and Resource Management, Prince Albert, Saskatchewan, personal communication.

CASE 27 — Ketchikan, Alaska, 2000.

Three deer hunters were traversing a steep creek bottom near Ketchikan, Alaska when 3 wolves suddenly appeared, running toward them. The wolves stopped at 30 m and then began pacing as they barked and howled. The hunters immediately retreated but reported they heard high-pitched yips and howls coming from behind the 3 adult wolves, suggesting pups were nearby. The timing of this incident suggests the hunters had stumbled upon a late summer rendezvous site, which the wolves defended.

Source: Boyd Porter, Alaska Department of Fish and Game, personal communication.

CASE 28 — Bella Bella, British Columbia, 2000.

On 27 September at 6:20 PM, a biologist was videotaping wolves on an island near Bella Bella, British Columbia. A group of 4 pups and 3 adults were resting in a grassy meadow near an estuary where wolves commonly fed on salmon. The wolves were in the open, and the biologist was 100 m away, partially obscured by brush. Initially, the wolves did not react to the man's presence, but eventually some pack members began looking toward his location. Suddenly, the alpha female focused on the man, raised her tail to a $\frac{3}{4}$ -high position, raised her head, and began a hopping charge that threw debris into the air behind her as she jumped forward driving her legs against the ground. She broke into a stiff-legged lope with tail raised and stopped about 50 m from the man; she urinated and scratched the ground with her paws. For 3 minutes the wolf cautiously and slowly moved from right to left and back to the left in front of the biologist. At one point a pup briefly joined her, but the pup appeared not to notice the man.

The female wolf then began a slow, walking circle frequently sniffing the ground and glancing over her shoulders in all directions in what appeared to be an inhibited, cautious stalk. She circled the biologist 180 degrees to the left and approached him from behind, where tree branches partially concealed her from his view. When about 20 m behind him she stopped, defecated, and then scratched the ground with her front paws. Then she circled to the right, her posture and behavior alternating between cautious and assertive, with her tail alternately straight out and then down in the $\frac{1}{4}$ -low position and sometimes hanging. When directly in front of Darimont, she stepped toward him and scratched the ground with her front paws while holding

her tail straight out. She then urinated with a raised leg and raised her tail to $\frac{3}{4}$ high. That assertive posture lasted only a few seconds then she continued to hesitantly pace in front of the man for about another minute. A raven flying overhead seemed to intimidate her; she lowered her ears, ducked her head, and looked up when the bird flew past. Then with her head lowered and pushed forward and her tail out straight, she cautiously stepped closer. Darimont said "Hey Wolf" in a calm tone; the wolf jumped back turning in the air. Her tail went to the low position, and when the raven flew over and croaked loudly, she tucked her tail between her legs. She stood broadside for a few seconds looking back toward the pups, and then walked away, briefly stopping to glance back. Once she was about 50 m from the biologist, she straightened her tail and returned to the pups. Darimont left the area shortly thereafter, but the wolves did not appear disturbed by his movement.

There are no permanent human residents on many of the islands in the Bella Bella area. The wolves are subjected to light hunting and are not known to be food conditioned or habituated to people. The urinate, defecate, ground scrape sequences and assertive posturing exhibited by the alpha female was an interesting territorial display not otherwise reported in this case history. However, the charging gait appears in other encounters with wolves near den or rendezvous sites, but in those cases aggressive behavior is normally associated with frequent vocalizations; in this case it was not.

Source: Chris Darimont, University of Victoria, British Columbia, personal communication.

CASE 29 — Prince of Wales Island, Alaska, 1995–2001.

Between 1995 and 2001, Dr Dave Person conducted a study of wolf den sites in Southeast Alaska. Field crews visited 16 active wolf dens and inserted an infrared video probe into den cavities to view and count pups. At least one adult wolf was present at each den when biologists approached. Dr Person described the wolves' behavior as follows: "Generally, wolves would bark and howl and frequently approached biologists to within 10–15 meters. As wolves approached they often trotted directly toward the biologists or darted between intervening cover while approaching. In some cases, usually when a lone wolf was present, wolves would move 50–100 meters from the den and howl. Reaction by wolves was most intense when observers first reached dens, but eventually the wolves would move away and maintain a vigil from a greater distance. When field crews left the den sites, the wolves generally followed, barking and howling until the biologists were up to a kilometer from the den."

Dr Person reported that he and the other biologists did not feel threatened by the wolves' behavior, but the willingness of wolves to closely approach people while loudly vocalizing illustrates an agonistic defense behavior that is uniquely characteristic of wolf responses to human intrusions at den and rendezvous sites during spring and summer.

Source: Dr Dave Person, Alaska Department of Fish and Game, personal communication.

CASE 30 — 100-Mile Creek, Alaska, 1995.

At 11:00 PM on 5 June, biologist Mark McNay and helicopter pilot Jonathan Larrivee landed approximately 300 m from a wolf den to confirm the presence of pups. The den was located near the top of a small hill that was covered by birch trees. As McNay and Larrivee climbed the hill, the alpha female and another wolf rushed over the top, running in long leaping strides directly toward the men. The wolves veered off about 20 m from the men and the alpha female emitted a loud cough-like bark. The wolves immediately ran into the surrounding trees and circled at a

distance of approximately 100 m. McNay and Larrivee continued to the den and listened at the den entrance. After hearing pups inside, the men walked back to the helicopter. Other than the initial rush, the wolves remained mostly out of sight, but they frequently barked and howled.

Source: Mark McNay, Alaska Department of Fish and Game, unpublished field notes.

CASE 31 — Fortymile River, Alaska, 1994.

In February during a wolf capture attempt from a helicopter, a biologist darted an alpha female wolf. The animal was immobilized, but the capture team couldn't approach because the alpha male aggressively charged each time the helicopter set down. Eventually, the capture team darted and immobilized the male in order to handle the female. This incident is unique in that the aggressive behavior by the male was in defense of his incapacitated mate during winter, rather than in defense of pups at a summer den or rendezvous site. The male had the option of leaving the area and was not being harassed or chased by the helicopter when he first charged toward the crew as they landed. Another, but less aggressive, case of wolves defending conspecifics during winter is described in Case 35.

Source: Patrick Valkenburg, Alaska Department of Fish and Game, personal communication.

CASE 32 — Riding Mountain National Park, Manitoba, ca 1990.

In June Dr Paul Paquet and his wife were making observations of a wolf den in Riding Mountain National Park. They camped on a small island watching a den that was only 50 m away near the shore of the lake. They did not erect a tent but were sleeping in bivouac sacks on the ground. After 7 days of observations they awoke one morning to find the wolves had abandoned the den site. They continued their watch of the den that day, but the wolves did not return. Late in the day the Paquets moved off the island and set up a small nylon tent near the lakeshore about 100 m from the den. A nylon rain fly covered the tent and was anchored to the ground with nylon line. At 1:00 AM the Paquets awakened when wolves began howling nearby. The wolves approached and closely circled the tent growling and barking. They tripped over the lines holding the fly. Paquet exited the tent with a flashlight to drive the wolves away and recognized the alpha female and other members of the pack in the beam of his light. Despite the man's presence outside the tent, the wolves remained within 2–3 m and displayed threatening postures and vocalizations. Paquet returned to the tent and the wolves remained nearby for about 2 hours before moving away.

The next day Paquet found the wolves' new den site about 500 m from the old den. The couple established an observation position about 100 m from the new den but did not erect the tent. They continued watching the wolves for several days and did not experience further threat behavior from the wolves. Apparently, the wolves had become habituated to the Paquets in the original context (i.e., on the island, sleeping in bivouac sacks), but when the tent was erected at a new site it was sufficient stimulus to elicit defensive behavior. However, when the Paquets returned to bivouac sacks to make their observations, the wolves again perceived the people as nonthreatening. Obviously, it was not the people per se that stimulated the defensive response.

Source: Dr Paul Paquet, University of Calgary, Calgary, Alberta, personal communication.

CASE 33 — Ross River, Yukon Territory, 1990.

Al Baer and Bob Hayes, biologists with Yukon Fish and Wildlife Branch, flew by helicopter to a wolf den near the Ross River in the Yukon Territory. It was early August and the wolf pack was using the site as a rendezvous area; the biologists planned to collect scats as part of a food habits study. When the helicopter landed the adult wolves retreated. The biologists heard the adults howling some distance away, but the pups were howling close to the den site. The men responded to the wolf howls with howling of their own and the pups moved closer. As Baer and Hayes approached on foot, the radiocollared alpha female returned and came to the edge of small bluff only 20 m from Baer. The wolf stared at the men and displayed what Baer described as a nervous grin, a mouth gape with teeth exposed. She then turned, disappeared from view, and began barking. The wolves remained in the area for another 10 minutes apparently trying to locate and shepherd the pups away from the biologists.

Source: Al Baer, Yukon Fish and Wildlife Branch, Whitehorse, Yukon, and Bob Hayes (retired), Yukon Fish and Wildlife Branch, Haines Junction, Yukon, personal communication.

CASE 34 — 15 km southeast of Churchill, Manitoba, 1984.

Three biologists hiking through a spruce-lichen woodland had stopped near a small clearing when a wolf suddenly rushed toward them. One of the men shouted and stomped his feet. The wolf attempted to stop but lost its balance and crashed into a bush within 5 m of another member of the party. That wolf then retreated into the forest, but simultaneously a second wolf rushed directly at one of the biologists "...in approximately 2-m bounds, ears up, tail straight out, and its eyes locked onto his." The biologist sounded a hand-held air horn at arms length when the wolf was within 2 m. The wolf diverged slightly in its charge and landed less than a meter from the biologist, and then apparently in response to the horn, the wolf retreated toward the trees.

The 3 biologists immediately climbed into nearby spruce trees as the second wolf paced within 10 m barking and howling. The biologists remained in the trees for 4 hours; more than 30 times they observed 3 different wolves pacing within 15–35 m. Eventually, after no wolves had been sighted for some time, the biologists climbed down and left the area, but they discovered a wolf den of unknown status within 1 km of the clearing where the wolf encounter had occurred.

Later that summer the biologists observed tracks of wolf pups within 3 km of the encounter site. The existence of pups and the proximity to a den site suggests the party stumbled onto a rendezvous or den site that was aggressively defended by the wolves.

Source: Scott et al. 1985.

CASE 35 — Riding Mountain National Park, Manitoba, 1979.

Tim Trottier worked as a wildlife technician on a wolf research project in Riding Mountain National Park, Manitoba. In December Trottier was dispatched to retrieve the carcass of a radiocollared wolf that had died in a remote area. He snowmachined approximately 27 km through deep snow before the machine became mired in overflow at a creek crossing. He abandoned the machine and continued on snowshoes for an additional 5 km before reaching the dead wolf.

Trottier arrived at the wolf carcass late in the day and decided to spend the night rather than attempt to carry the wolf out in the dark. Trottier did not have a tent or sleeping bag, so he built a fire and remained awake most of the night. During the night wolves periodically howled nearby,

and on several occasions Trottier could hear them walking in the brush. The wolves remained close throughout the night, but just before dawn they howled again about 1–2 km away. At daylight Trottier was able to determine by tracks in the snow that several wolves had circled within 100 m of his campfire during the night and had also visited the carcass of the dead wolf that lay nearby. The dead wolf was a pup and Trottier found another dead pup nearby. It was determined from the necropsy that the wolves had died from pneumonia and distemper.

This case contains many behavioral elements often exhibited by wolves defending a den or rendezvous site, but it occurred during midwinter. Apparently the pack was defending the remains of the wolves that had died near Trottier's bivouac, or possibly other sick and weakened wolves that may have been nearby. The fact that both wolves had succumbed to disease suggests they had been lying at that site in a weakened state for some time before dying. That situation may have contributed to the pack's defensive behavior.

Source: Tim Trottier, Saskatchewan Environment and Resource Management, La Ronge, Saskatchewan, personal communication.

Provoked Aggression in Self-defense. When wolves are aggressively pursued they may resort to aggressive behavior that could result in human injury. Wolves probably resort to aggressive charges in self-defense when other avenues of escape are not available. The following 4 cases (Cases 36–39) describe aggressive wolf behavior witnessed by biologists during wolf capture efforts.

CASE 36 — 24 km southeast of Ely, Minnesota, 2000.

In August wildlife technicians Michelle Szepanski and Paul Frame were checking wolf traps in northern Minnesota as part of a research project with the Biological Research Division of the US Geological Survey. Near a highway they found a wolf caught by its front foot in one of their traps. The Newhouse #14 trap was attached to a length of chain that was secured to an iron hook drag. The drag was entangled in the brush, and as Frame circled the wolf to administer the immobilizing drug with a jab stick, Szepanski stood near the road to dissuade the wolf from moving in that direction. As Frame approached, the wolf pulled the drag free and began running parallel to the road. With arms outstretched, Szepanski moved toward the wolf in an attempt to haze it into the brush. When the drag caught, the wolf tumbled to a stop. After regaining its feet, the wolf looked at Szepanski, charged, and leaped with open jaws toward her face. The wolf reached the end of the chain and snapped its jaws closed, brushing its teeth across the woman's shirt. The wolf tumbled to the ground as it was pulled back by the chain; Szepanski stepped back and the wolf retreated toward cover where it became completely entangled and was immobilized.

The wolf, an adult female, did not vocalize or act aggressively after its initial charge. Based on the size of the teats, Szepanski and Frame concluded the wolf had been lactating earlier that summer.

Source: Michelle Szepanski, Alaska Department Fish and Game, personal communication.

CASE 37 — Goodpaster River, Alaska, 1998.

From a helicopter, biologist Craig Gardner was attempting to dart an alpha female when the wolf suddenly turned, focused on Gardner, and charged toward the open door of the helicopter. The pilot pulled the helicopter up, but the wolf lunged into the air and caught the helicopter's landing gear with her teeth about an inch behind Gardner's boot. As the aircraft continued to rise,

the wolf was lifted into the air until her teeth slid down the landing gear and struck against a cross piece. The blow knocked the wolf off and it fell about 2 m to the ground, unharmed.

Source: Craig Gardner, Alaska Department of Fish and Game, personal communication.

CASE 38 — Hinton, Alberta 1995 and Fort St. John British, Columbia, 1996.

Among approximately 70 wolf captures conducted from helicopters during January 1995 and January 1996, only 1 wolf charged toward a helicopter. The animal was an old-aged alpha female that, after a short pursuit on an open ridge, turned, charged with a hopping gait, and snarled as it leaped toward the pursuing helicopter. The helicopter withdrew and then approached again. The wolf was darted and immobilized.

Source: Mark McNay, Alaska Department of Fish and Game; unpublished field notes.

CASE 39 — Tanana River Alaska, 1995–2000.

Among 259 wolves that were captured using helicopters in Alaska's Unit 20A between 1995 and 2000, only 2 charged toward the helicopter. Each wolf opened its mouth in a wide gape and snapped it closed in an exaggerated biting motion. Both animals were estimated to be older than 7 years of age.

In the first instance, an alpha female charged and leapt at the helicopter that was hovering only a few meters off the ground. The biologist attempting to dart the wolf was partially outside of the helicopter and thrust his boot downward toward the wolf's open mouth to prevent her from grasping the skid. In the second instance, an alpha male charged but veered away when about 5 m from the hovering helicopter.

Source: Mark McNay, Alaska Department of Fish and Game; unpublished field notes.

Rabies

Rabies is enzootic among foxes in western and northern Alaska, in arctic Canada and in areas of Ontario, Quebec, and Labrador. Human encounters with rabid wolves have been reported from all of those areas. Behavior among rabid wolves is highly variable, as illustrated in the following 12 cases (Cases 40–51), and does not necessarily involve a ferocious attack.

CASE 40 — Trans-Labrador Highway, Newfoundland, 2001.

In June 2001 a wolf attacked 3 vehicles on the trans-Labrador Highway between Churchill Falls and Labrador City-Wabush. Pieces of the vehicles were torn off, lights were broken, and many scratches were apparent from the wolf's teeth and claws. The wolf was eventually hit by a fourth vehicle and dragged itself into the surrounding brush. The wolf's carcass was not recovered for analysis, but a rabies outbreak in red foxes was underway at the time.

Source: Rob Otto, Wildlife Research Division, Department of Tourism, Culture and Recreation, Goose Bay, Newfoundland, personal communication.

CASE 41 — Raymore, Ontario, 2001.

In January an aggressive wolf was reported to have attacked and bitten a dog and a horse near Raymore, Ontario. When the Ontario Provincial Police arrived the wolf attacked the police car, flattening a tire and puncturing the bumper with its teeth. The animal was killed and it tested positive for rabies.

Source: Charles MacInnes, Rabies Unit, Ontario Ministry of Natural Resources, personal communication.

CASE 42 — Labrador City-Wabush, Newfoundland, 1997.

In autumn 1997 reports of a wolf acting strangely in Labrador City-Wabush prompted police to investigate. When they arrived the wolf approached and jumped onto their vehicle. The wolf was killed and tested positive for rabies. A rabies epidemic in red foxes was occurring at the time.

Source: Rob Otto, Wildlife Research Division, Department of Tourism, Culture and Recreation, Goose Bay, Newfoundland, personal communication.

CASE 43 — Ellsmere Island, Nunavat, 1995.

On 22 April 1995, 3 men were bitten by a rabid wolf at the Canadian Forces Base Alert on Ellsmere Island. One man received a 7.5 cm laceration on his knee from the bite; the other 2 men received minor bites. The 3 men were not together, instead the wolf encountered them in separate areas and briefly attacked each man. One man was attacked as he was moving a vehicle out of a garage; the other two men were attacked as they walked between buildings. The wolf was shot with a rubber bullet in an attempt to scare it away, but the bullet ruptured a blood vessel, killing the wolf. The wolf tested positive for rabies; later another dead wolf was found near the base.

Source: Edmonton Journal, 29 April and 30 April 1995.

CASE 44 — Spence Bay, Northwest Territories, 1991.

Gideon Nanook was traveling by dog team in early January, 12 miles from Spence Bay, Northwest Territories. He had stopped to collect water when the dogs began barking at an approaching wolf. The wolf began fighting with the dog team. Nanook jumped on the sled, urging his dogs forward, but the wolf followed. The man stopped and pulled out his rifle, but the rifle jammed. The wolf attempted to attack Nanook, but the hunter moved around the sled keeping the dogs between himself and the wolf. Finally, the wolf charged through the dogs and grabbed the man's parka. Nanook struck the wolf with the rifle, knocking the animal unconscious. Nanook killed the wolf with a knife. The wolf tested positive for rabies.

Source: News of the North, 14 January 1991.

CASE 45 — Huikitak River, Northwest Territories, 1984.

On 9 June biologists Susan Fleck, Doug Heard, and Mark Williams landed by helicopter about 400 m from what appeared to be a wolf den near the Huikitak River west of Bathurst Inlet, Northwest Territories. They started walking toward the den and after a short distance saw what appeared to be a lactating female wolf slowly walking away and turning to look at them as she walked. When the biologists were 100 m from the den a second wolf stood up and began walking

directly toward them. The wolf was injured and had a piece of flesh hanging below its jaw. When the wolf was less than 30 m away, Williams and Heard began shouting, but the wolf walked directly up to Williams and bit at the tripod he was holding in his hands. The wolf pulled on the tripod and Williams pulled back. Eventually, the wolf released the tripod and moved toward Susan Fleck. The animal grabbed the tripod she was holding and pulled it from her hands. Fleck began moving toward the helicopter that was 200 m away. The wolf followed and approached her. She pushed her pack into the wolf's face, and it ripped off part of the pack. Fleck retreated further, but the wolf approached again. This time the wolf took the entire backpack. The sequence was repeated again and the woman hit the wolf in the face with binoculars, then with a camera, and then later with another camera as she continually moved toward the helicopter. Finally, Fleck jumped inside the helicopter as the pilot was starting the engine. Heard, who had reached the helicopter at the same time, pulled out a shotgun and shot once at the wolf but missed; he fired 2 more times knocking the wolf down once, but it regained its feet and began moving back toward Williams who was still some distance away. When it reached Williams the wolf again grabbed the tripod, but Williams was able to fend the wolf off. The wolf finally released the tripod and walked back toward the den site. The biologists boarded the helicopter, flew to the den, and killed the wolf.

The wolf, a large, light-colored male, tested positive for rabies. Heard described the wolf's behavior as debilitated. It had a glazed expression on its face and did not react when struck by the binoculars or the pack. This incident illustrates a mild form of aggression in a rabid wolf similar to that seen by Richard Chapman (Case 46) but strikingly different from the ferocious aggression exhibited by rabid wolves in the cases of Panuekuk Sampson (Case 51) and Mike Dusiac (Case 50).

Source: Mark Williams, British Columbia Ministry of Water, Land and Air Protection, Smithers, British Columbia, personal communication.

CASE 46 — Arctic National Wildlife Refuge, Alaska, 1977.

Biologist Richard Chapman was making observations of a wolf home site on 14 July when he observed a wolf trotting past his tent; he whistled to attract its attention so that he could take a picture. After briefly trotting back and forth 10–15 m away, the wolf approached to within 3 m of Chapman. The biologist shouted at the wolf and banged on cooking pots, but the wolf retreated only 15 m and then returned. This time Chapman struck the wolf in the head with a boot that was lying nearby; the wolf retreated a short distance and returned; and again Chapman struck the wolf with the boot. The wolf responded by snapping at the boot and retreating about 10–15 m. When the wolf approached a third time, Chapman shot and killed it using a pistol. The wolf tested positive for rabies.

Chapman described the wolf's gait as, "slightly staggering." The wolf did not appear to be fully alert, and its muzzle was covered with saliva and debris. During the encounter the wolf had stopped on at least one occasion to bite into the ground. The previous day Chapman had witnessed this wolf fighting with several of its pack mates and a month later, in mid-August, Chapman found 6 dead wolves in the vicinity of his camp. Three of those wolves had porcupine quills imbedded in their muzzles. Two of the wolves were tested for rabies, both were positive. The persistent, but nonferocious behavior exhibited by this rabid wolf was similar to that described by Mark Williams for a wolf encounter in the Northwest Territories (Case 45).

Source: Chapman 1978.

CASE 47 — Anaktuvuk Pass, Alaska, 1945.

In winter 1944–1945, the elderly father of Elijah Kakinya was attacked by a wolf, presumed to be rabid, in a camp of the Nunamiut near Anaktuvuk Pass. The man was bitten on the hand and the animal was killed but not tested for rabies. Kakinya was not treated for rabies, but he did not develop the disease.

Further details of this attack were not available. The wolf was presumed to be rabid because the incident occurred during an epizootic of rabies in the Anaktuvuk area. At least 5 apparently rabid wolves were killed in that vicinity during 1945 (Rausch 1958).

Source: Letter from Dr Robert L Rausch to Don Ritter dated 17 Oct 2000; and Bob Stephenson, Alaska Department of Fish and Game, unpublished field notes.

CASE 48 — Etivluk River, Alaska, 1943.

Zacharias Hugo, a 14-year-old Eskimo boy, was hunting caribou during winter along the headwaters of the Etivluk River in northern Alaska. As he stalked along a willow-lined creek to intercept a herd of caribou, he came to a boulder-strewn hill and paused when he heard something crunching the snow behind him. He turned and saw a large black wolf approaching. The wolf jumped onto the boy's back and tried to bite into the boy's neck. Zacharias raised his arm to protect himself, and the wolf bit into his forearm. The boy was wearing a caribou skin parka and had his rifle attached to his backpack. With the wolf on him, Zacharias was unable to reach his rifle. He dropped face down into the snow as the wolf bit him along his legs, back and neck, and then dragged him about 15 m. The wolf paused briefly before biting again and dragging the boy another 3 m. Eventually, the wolf abandoned the attack and disappeared. Hugo attempted to follow the wolf but blowing snow obscured its tracks, and the boy returned to camp. Only 2 bites penetrated the boy's skin, but they inflicted 2 deep punctures in his right forearm that bled profusely.

The next day Zacharias and his father, Inualuruk, returned to the site and found where the wolf had spent considerable time among the rocks; they estimated several days based upon the amount of tracks and urination sites in the snow. The tracks were splayed open and Inauluruk believed the splayed tracks indicated the wolf was rabid.

This encounter has long been considered, and probably was, a rabid wolf attack (Don Ritter, Alaska Virology Laboratory, personal communication). It occurred during a period when a rabies epizootic spread throughout northern Alaska and into the western arctic of Canada. However, the wolf in this case was not killed, and the fact that the wolf abandoned the attack is somewhat inconsistent with other cases involving rabid wolves. In addition, Hugo was not treated for rabies but never developed the disease. The pattern of the attack, and Hugo's failure to contract rabies, leaves open the possibility that the wolf attacked the boy in a predation attempt on unfamiliar prey or misidentified the boy as a caribou because the boy was wearing caribou skin clothing.

Source: Interview with Zacharias Hugo recorded 24 October 1972 by Bob Stephenson, Alaska Department of Fish and Game.

CASE 49 — Wainwright, Alaska, 1943.

In May, 10-year-old Teddy Segevan was attacked by a rabid wolf as he was gathering ice for drinking water one morning before school. The boy was severely mauled and subsequently died from rabies. Similar to the case of Panuekuk Samson (Case 51), the wolf involved in this case mounted an aggressive attack that resulted in serious injury and transmission of the rabies virus

Source: Don Ritter, Alaska State Virology Laboratory, personal communication.

CASE 50 — Poulin, Ontario, 1942.

On 29 December, Mike Dusiac of the Canadian Pacific Railway was riding a small one-man rail cart in early morning darkness near Poulin, Ontario when a wolf suddenly lunged from the side of the track, grabbed the man's arm, and knocked both man and cart off the track. Once on the ground the wolf continued the attack, and the man held the wolf at bay with an axe for 25 minutes. On several occasions Dusiac struck the wolf with the ax but apparently did not severely injure the wolf. Finally, a passing train stopped when the crew saw the lone man fending off the wolf. Three crewmen from the train came to Dusiac's aid and killed the wolf with picks and other tools from the train. Dusiac was exhausted by the prolonged fight but was otherwise uninjured. The initial bite of the wolf, which knocked Dusiac off the track, had not penetrated his skin but instead had been caught in the man's sleeve. An experienced biologist that inspected the wolf carcass the next day reported the wolf was not an old wolf and appeared to be in normal condition.

Rutter and Pimlott (1968) reviewed the Dusiac attack several years later, and although the wolf was not tested for rabies, they concluded the wolf was rabid because of its persistence during the attack. Certainly, the persistent nature of the wolf's aggression was similar to that exhibited in some other cases involving rabid wolves (Cases 49 and 51).

Source: Peterson 1947.

CASE 51 — Noorvik, Alaska, 1942.

A 72-year-old Eskimo hunter, Panuekuk Samson, was severely mauled by a rabid wolf on 27 January. The attack occurred at night after the man heard a disturbance outside near his dog team. Samson went out to investigate and was ferociously and repeatedly attacked by the wolf over a 30-minute period during which the man was repeatedly bitten and the wolf repeatedly stabbed with a knife. During the encounter, the wolf periodically retreated a short distance away, then returned and attacked again. The victim was near exhaustion when the wolf finally retreated into the darkness and did not return. The man subsequently recovered from the mauling, but he developed rabies and died of the disease on 14 March 1942.

The wolf involved in this case was killed the following day while attacking dogs in the village of Kiana, 24 km from where it had attacked Panuekuk Samson.

Source: Don Ritter, Alaska State Virology Laboratory, personal communication and Rausch 1958.

NONAGGRESSIVE ENCOUNTERS

Investigative Search and Scavenging Behaviors

Investigative behaviors are well developed in wolves. When wolves are not conditioned to avoid humans, they may enter campgrounds, remote camping sites, or even villages to explore,

scavenge, and investigate those novel contexts. Where wolves find food they often become conditioned to seek out and search human-use areas for food, but even where wolves do not find food they sometimes chew on shoes, camping gear, sleeping bags, and human clothing. Often these wolves are described as nonaggressive, but their investigative behavior can sometimes lead to human injury. The following 19 cases (Cases 52–70) describe wolf investigative behaviors in human-use areas. In one case where a man was lightly bitten, the bite probably resulted as a consequence of the wolf's investigative behavior rather than as an agonistic response because the man was asleep when bitten, and when the man awakened, the wolf retreated.

CASE 52 — Denali National Park, Alaska, 2001.

In summer 2000 several wolves in the East Fork pack in Denali National Park, including the alpha female, became highly habituated to humans (Case 53). During winter there is little human activity in Denali Park and the East Fork pack has no access to human food or garbage. Natural prey consists of moose, caribou, and Dall sheep. However, the habituation fostered during summer 2000 persisted in those wolves and they began exhibiting similar behavior early in the tourist season of 2001. The following account illustrates a high level of habituation and an attraction to a crying infant.

Early in the evening on 31 May, a man walking his dog saw 6 wolves near the Teklanika campground. Later that night an infant began crying in a tent at one of the campsites. Three wolves entered the campground, approached the tent, and 1 wolf pressed its nose against the bug screen that was zipped closed. The parents of the child were inside the tent with the infant; they saw the wolf but made no noise or attempt to drive the wolf away. Eventually, the wolves began searching around the edge of the tent where they found a pair of sandals and a child's toy, which they chewed before moving off. The same wolves then moved to a nearby campsite where another small child was in a tent. The wolves investigated that tent, found another pair of shoes, and chewed those before leaving.

Source: Jason Ransom and Ed Vorisek, National Park Service, Denali Park, Alaska, unpublished occurrence reports and personal communication.

CASE 53 — Denali National Park, Alaska, 2000.

In summer 2000 a wolf pack denned near a campground in Denali Park and over the summer the wolves displayed increasingly habituated behavior toward people. The following series of encounters describe the development of food-conditioned and novelty-conditioned behaviors among the East Fork pack. Although the wolves learned the behaviors near the Teklanika campground, they subsequently exhibited food-conditioned behaviors within a 9-km radius of that campground on several occasions. One incident during July 2001, that probably involved wolves of the East Fork pack, occurred 30 km from the Teklanika campground. These incidents are similar to encounters reported from Canada's Banff National Park and Algonquin Provincial Park where wolves are also protected and frequently encounter people (Cases 54 and 58).

On 4 June at a campsite near Calico Creek, 4 people were sleeping when 2 wolves approached the campsite. "One wolf stayed just outside our campsite, and 1 wolf checked out our campsite, sniffing anything not natural (water bottles, socks, hiking poles, boots, etc.). They basically ignored us when we poked our heads out of our tents and talked. One wolf got a water bottle with a carry sleeve, bit off the toggle to pull the sleeve off, and then licked the sleeve (we

suspect it had dried Gatorade on it). After they got bored, they made a bee-line for the BRFCs (Bear Resistant Food Containers) and then left.”

On 9 June, 2 people were camping in open tundra at a backcountry site approximately 4 km from the nearest road. “At 9:30 my wife and I were talking inside the tent when we heard something sniffing around the tent. When we went out to investigate there was a wolf with our cooking utensils in its mouth. It did not bother about us being there. When it had eventually finished doing what it wanted, it left and continued in the same direction it had been going, toward another tent, maybe 2 or 3 km away.” The witnesses reported the cooking utensils included pots with burnt food residue.

On 30 June, 2 people were camping on a tundra bench above the junction of Calico Creek and the Teklanika River. During the night they left a backpack outside their tent. An animal dragged the pack 25–30 m and tore it open. It chewed on a can of bug spray and a water bottle, but no food was in the pack. The food was stored nearby inside BRFCs along with cooking pots, but the food and cooking gear were not disturbed. The people reported they heard nothing and slept through the encounter. Upon inspection of the bug spray can the next day, the campers found tooth marks that indicated the animal in question was probably a wolf.

On 7 July, 2 people were backcountry camping near the Teklanika River. They were inside their tent when a wolf approached to within 1 m. They reported the wolf did not react to their presence.

On 22 July, near the Teklanika River, a group of 5 wolves approach to within 6 m of a man at his backcountry campsite. The man reported the wolves were trying to get into his backpack that was lying near his tent. The wolves did not react to the man’s presence and eventually left the area when they noticed a small group of caribou in the distance.

On 26 July at the Igloo campground, witnesses saw a single wolf climb onto a picnic table to grab a water bottle, which it carried away. The wolf did not respond to attempts to discourage its behavior.

During the night of 26 July, wolves attacked and wounded a young bull moose near the Teklanika Bridge on the Denali Park Road. Periodically throughout the next 2 days, the wolves attempted to finish the kill, but the moose waded into deep water when the wolves approached. On 27 July, about 20 people had gathered on the bridge to watch the wolves. One of the wolves, a yearling, came onto the bridge and began approaching vehicles and people. The wolf attempted to grab an unattended backpack and successfully grabbed a photographer's tripod. The wolf repeatedly circled to investigate people on both ends of the bridge and walked within 1 m of people showing little apparent concern. The wolf did not respond to shouts or loud noises but eventually wandered north along the river and stopped to investigate and eat what appeared to be a weathered piece of plastic. An adult female wolf also crossed the bridge and passed by people on the end of the bridge. Three other wolves that were involved in trying to kill the moose remained in the area but stayed well clear of people.

Source: Jason Ransom and Ed Vorisek, National Park Service, Denali Park, Alaska, unpublished occurrence reports and personal communication.

CASE 54 — Banff National Park, Alberta, 2000.

In summer 2000 a large pack of wolves (Fairholm pack) colonized the Bow Valley within Banff National Park near the town of Banff, Alberta. The valley contained a high concentration of wintering elk but also contained human residential areas and attracted thousands of tourists and campers during the summer months. Two wolves, 1 male and 1 female, began following

vehicles and then approaching parked vehicles, suggesting they were receiving food handouts from cars along the highway. The 2 wolves were captured and collared in early winter 2000; both were pups and were approximately 5 months old at that time of their capture.

In summer 2001 the collared wolves began entering the town, and the male killed a dog that was tethered to a porch in a residential neighborhood. The female took food from picnic tables, stole food from a U-Haul trailer, licked pots at campsites, stole a tablecloth from a storage bag, and foraged on campsite garbage, almost always at night. She also approached groups of people at campfires, and once, stuck her head into an open lean-to where 2 children were sleeping.

Park officials frequently monitored the radio signals as the wolves moved among residential areas. Witnesses described the wolves as nonaggressive, yet unafraid. In one instance, when chased on foot by park personnel, the female yearling ran just fast enough to stay 15–20 m ahead of her pursuer. The wolves were aversively conditioned with beanbags, rubber bullets, and noisemakers fired from shotguns when opportunities arose. The aversive conditioning had no lasting effect in repelling the wolves from human-use areas, but the wolves developed an avoidance response to the park wardens who were monitoring the wolves' movements.

Radiolocations indicated that the problem wolves continued to interact with other pack members, and the female periodically returned to the 2001 rendezvous site and served as a "babysitter" for that season's litter of pups. Observations of behavioral interactions with other pack members showed that the male, despite his size of 54 kg, occupied a low rank in the pack and several times was the victim of mobbing behavior by other pack members. The pack numbered 17 wolves in summer 2001, but the collared yearlings often traveled together, separated from the remainder of the pack. Other pack members occasionally exhibited fearless behavior, and noncollared wolves were occasionally seen with the collared wolves in human-use areas. The 2 habituated wolves continued to prey on elk and other natural prey with other wolves of their pack.

Park personnel became concerned that the food-conditioned and habituated behaviors of the 2 yearlings was leading to a generalized food-conditioned response among other members of the pack, and that their habituated behavior could lead to human injury. Therefore, wardens destroyed the 2 wolves; the male was killed in late July and the female in late August 2001.

The wardens maintained an almost constant vigil for these wolves beginning in early July 2001. Many contacts with the wolves were made during the night or early morning hours before dawn. The female was fired upon with aversive conditioning materials on 7 occasions and hit with rubber bullets or beanbags at least 3 times. The male was hit with a rubber bullet at least once.

Source: Glen Peers, Banff National Park, Alberta, unpublished occurrence reports and personal communication.

CASE 55 — Shrimp Bay, Revillagigedo Island, Alaska, 2000.

On 15 May Alaska Fish and Wildlife Protection Officer Dennis Roe received an anonymous telephone call reporting a fearless wolf had been shot near a logging camp on Revillagigedo Island, Alaska. Roe investigated the report and found that truck drivers and equipment operators frequently fed a wolf near the remote logging site. Workers at the camp reported that the wolf quickly became food conditioned and began approaching people, stealing food from backpacks and vehicles. A photograph discovered by Roe showed the wolf taking food from a worker's hand.

The workers described the wolf as persistent rather than aggressive. That persistence annoyed and angered the cutters who were required to work on the ground where the wolf would constantly be searching for a handout. One worker had to start his chain saw and drive the wolf away by holding the blade at the wolf's face. Finally, frustrated by the wolf's persistence, a worker attempted to shoot the wolf, but the bullet passed through the wolf's ear causing a superficial wound.

The persistent approach behavior demonstrated by this wolf was similar to that described in other cases where wolves received food handouts (Cases 1 and 5). Food-conditioned approach behavior can lead to agonistic aggression if the wolf is denied an expected food handout (Cases 10, 11, and 12)

Source: Dennis Roe, Alaska Department of Public Safety, personal communication.

CASE 56 — Algonquin Provincial Park, Ontario, 2000.

Just before dark on 16 September, 2 park visitors encountered a wolf on a trail at a distance of about 15 m. The wolf started toward them, and one of the people shouted and began waving a walking stick. The animal approached until just beyond the reach of the stick and then stood its ground. The wolf did not growl but for several minutes the people held it at bay with the walking stick. The wolf retreated into the trees after one of the people threw a piece of wood that came close to striking the wolf.

Source: Dan Strickland, Algonquin Provincial Park, Ontario, personal communication.

CASE 57 — Fort Knox Gold Mine, Fairbanks, Alaska, 1999.

Wolves had been seen in the vicinity of the Fort Knox Gold Mine for several years, but none exhibited fearless behavior until summer 1999. During that summer wolves denned near the mine, and in midsummer, they established a rendezvous site below the mine tailings dam near a road occasionally used by mine employees and state biologists that monitored water quality. Throughout July and August the adult wolves foraged in the surrounding forests and returned to the rendezvous site where the 5 gray pups were viewed and photographed by mine employees. The wolves progressively became habituated and traveled near drilling pads where workers were operating loud machinery.

The wolves never approached people, but in late August a wolf approached a pickup truck, suggesting that mine employees may have thrown food scraps from vehicles. To avoid the potential for an aggressive encounter or food conditioning, the mine's environmental officer hazed the wolf pack away from the mine using cracker shells.

Unlike the wolves in Banff National Park that were not deterred by aversive conditioning (Case 54), the wolves at the Fort Knox mine immediately began avoiding people after aversive conditioning. The difference may be related to the stage of food-conditioned behavior. At Banff it was well developed before aversive conditioning began, but at the Fort Knox mine aversive conditioning was applied at the first appearance of approach behavior. Alternatively, the effectiveness of aversive conditioning at Fort Knox may have been related to the confined nature of the mine site where any food would have been obtained from only 1 area. Conversely, at Banff the wolves potentially obtained food from several widely separated locations, not all of which were associated with aversive conditioning.

Source: Bill Jeffers, Fort Knox Gold Mine, Fairbanks, Alaska, personal communication.

CASE 58 — Algonquin Provincial Park, Ontario, 1994.

On 22 August a woman and 2 teenage girls camped on Burnt Island in Algonquin Park. After dark they heard something outside their tent. The woman looked out and, in the moonlight, saw a wolf pulling a pack away from the tent. The woman quietly withdrew back into the tent. The wolf crushed a mascara box inside the pack and then dropped the pack about 2 m from the tent before moving off. The woman later reported she thought the wolf was frightened when it sensed her presence.

During August and September of that year a wolf displayed similar camp robbing behavior in the Opeongo-Lavieille Lake area and bit 2 people (Case 6). However, the distance between Burnt Island and Opeongo-Lavieille lakes suggested that 2 separate wolves were involved.

Source: Dan Strickland, Algonquin Provincial Park, Ontario, personal communication.

CASE 59 — Tibbles Lake, British Columbia, 1988.

On 23 July a man sleeping in the open behind a summer home at Tibbles Lake was awakened at 5:00 AM by a sudden sharp pain in his side, and he saw a wolf staring at him, less than 1 m away. The wolf moved off about 5 m when the man shouted and waved his hands, but then it turned and approached again. The man rose up on his knees while shouting and waving his arms. The wolf walked away, stopping to look back before it disappeared from sight. The wolf had bitten into the sleeping bag, grasping the sleeping man between his hip and armpit. The bite caused a minor abrasion and left 2 bruises on the man's side, but the fabric on the sleeping bag was not punctured or torn. The investigator characterized the bite as, "more of a hard pinch rather than an actual bite."

At 5:30 AM the following morning the wolf raided a nearby farmyard killing 3 sheep, fatally mauling 3 sheep, and inflicting bite wounds on 7 other sheep. At the sound of the disturbance, the livestock owner emerged from his house and saw the wolf carrying a chicken in its mouth approximately 10 m away. The man killed the wolf with a rifle. Later, the bite victim testified that he believed the dead wolf was the same wolf that had bitten him the previous night. The wolf, a 36 kg male, was in good condition and tested negative for rabies.

This case is unusual because the first reported encounter with this wolf involved the unprovoked bite of the man at Tibbles Lake. In other biting incidents, the wolves commonly exhibited food-conditioned or habituated behavior for some time before approaching people. I did not classify this encounter as aggressive because it seemed possible that the wolf's intent was to bite into the bag, rather than the man. However, 3 other cases also describe wolves that bit into or pulled on sleeping bags when campers were sleeping in the open (Cases 1, 4, and 61). In 2 of those cases serious injury resulted when the incidents escalated from a pull on a sleeping bag to an attack on the victims' heads (Cases 1 and 4).

Source: Al Lay, British Columbia Ministry of Water, Land and Air Protection, Princeton, British Columbia, unpublished occurrence report and personal communication.

CASE 60 — Riding Mountain National Park, Manitoba, 1984.

In May 1984 Dr Paul Paquet was recording wolf behavioral activities at a den site in Riding Mountain National Park, Manitoba. The alpha female was highly tolerant of his presence and allowed him to observe from a distance of only 40 m; sometimes she approached him to within a few meters. On 31 May, Paquet was lying in a bivouac sack making observations when the wolf approached and snatched a small lens cloth that was lying on the ground nearby. She carried the

cloth back toward the den and afterward, showed considerable interest in carrying it as she walked about the area. The following year, Paquet was observing the same den site of the same female and was surprised to see her carrying the lens cloth that she had taken the year before. Evidently, she had cached the cloth near the den site and continued to find it an interesting novelty a year after first borrowing it from Paquet. The wolf was not food-conditioned, and the chemical treatment on the cloth may or may not have been related to the wolf's interest in it.

This case illustrates a wolf's interest in a non-food "novelty." Habituated wolves in Denali, Banff, and Algonquin Parks also demonstrated that behavior (Cases 4, 53, and 54). Similar behavior was also noted among apparently nonhabituated wolves that encountered travelers in remote settings in the 1800s (Young 1944).

Source: Dr Paul Paquet, University of Calgary, Calgary, Alberta, personal communication.

CASE 61 — Mount Robson Provincial Park, British Columbia, 1981.

In midsummer 1981 a wolf near the Yellowhead campground in Mount Robson Provincial Park was thought to be responsible for the disappearance of a dog belonging to a tourist. A few days after the dog disappeared, 2 people were sleeping in the open in a nearby campsite. In the night a lone wolf bit into one of the sleeping bags and dragged the bag and its occupant across the ground. The startled camper yelled and frightened the wolf away. The man was not injured.

The following night Conservation Officer Murray Vatamaniuck placed a bag of garbage in the campground as bait and sat nearby in the front seat of his truck with the door open. A wolf entered the campground, approached to within 20 m of Vatamaniuck while staring directly at him, and then circled toward the back of the vehicle. Officer Vatamaniuck emerged from the truck, stalked toward the wolf, and killed it with a shotgun. The wolf was old, and its teeth badly worn. Other than the incident of the missing dog, there had been no other reports of wolves near the campground. Based on the wolf's behavior, Officer Vatamaniuck suspected the wolf had previously scavenged garbage from the campground, probably at night.

Source: Murray Vatamaniuck, British Columbia Ministry of Water, Land and Air Protection, Vernon, British Columbia, personal communication.

CASE 62 — Stony Rapids, Saskatchewan, 1980.

In winter 1980–1981 at least 4 wolves began feeding from an open garbage dump near the village of Stony Rapids on the Fond de Lac River in northern Saskatchewan. The wolves became habituated to the garbage trucks and began to time their arrival at the dump with the arrival of the garbage trucks. The wolves would then begin to scavenge in the garbage near the truck drivers. Eventually, the wolves moved into town and began killing dogs. Government agents began a trapping effort that removed most of the offending wolves and the problems ceased. Residents of the village did not actively hunt or trap wolves.

Source: Ed Kowal, Saskatchewan Environment and Resource Management, Prince Albert, Saskatchewan, personal communication.

Investigative Behavior Near Towns and Villages. When people encounter fearless wolves near rural villages, the wolves' lack of wariness is often interpreted as being associated with disease. As a result, many wolves have been killed in and around Alaskan villages and submitted for rabies testing.